

CLAIMS

1. A power unit mounting assembling method for mounting a power unit (P) including a power source (E) and a speed reducer (T) on a car body frame (F) in such a way as to interpose a mount (16, 17) carrying a static load of said power unit (P) between said power unit (P) and said car body frame (F) and interpose a sub-frame (SF) attached on said car body frame (F) between said power unit (P) and said car body frame (F), said method comprising in succession:

a first step of assembling said power unit (P) into said sub-frame (SF) in the almost same attitude as in a mounted state on said car body frame (F) by supporting said power unit (P) via an on-board mount (71, 81) on said sub-frame (SF);

a second step of attaching said sub-frame (SF) on which said power unit (P) is mounted at the first step to said car body frame (F); and

a third step of supporting said power unit (P) via the mount (16, 17) on said car body frame (F).

2. The power unit mounting assembling method according to claim 1, wherein said on-board mount (71, 81) is removed from between said sub-frame (SF) and said power unit (P) after the end of said third step.

3. The power unit mounting assembling method according to claim 1 or 2, wherein said mount (16, 17) includes a power source

sidemount (16) and a speed reducer sidemount (17) which are interposed between roughly both end portions of the power unit (P) along a principal axis of inertia (C) and said car body frame (F) to share the static load of the power unit (P), wherein said power unit (P) is mounted on said car body frame (F) in such a way as to interpose an almost horizontal torque rod (67) between the sub-frame (SF) to be attached on said car body frame (F) and a portion of said power unit (P) apart from the principal axis of inertia (C), and wherein said first step includes assembling said power unit (P) into said sub-frame (SF) in the almost same attitude as in the mounted state on said car body frame (F) by connecting said power unit (P) and said sub-frame (SF) via said torque rod (67) and supporting at least two positions on a lower portion of said power unit (P) on the sub-frame (SF) via said on-board mount (71, 81).

4. The power unit mounting assembling method according to claim 3, wherein said power source side mount (16), said speed reducer side mount (17) and said on-board mounts (71, 81) comprise supported members (28, 42, 73, 83) attached to said power unit (P), supporting members (26, 49, 78, 84) attached to said car body frame (F) and said sub-frame (SF), and mount rubbers (27, 47, 74, 85) interposed between the supported members (28, 42, 73, 83) and the supporting members (26, 49, 78, 84) corresponding to each other, respectively, and wherein the rubber contents of the mount rubbers (74, 85) provided for said on-board mounts (71, 81) are set to be

smaller than the rubber contents of the mount rubbers (27, 47) provided for said power source side mount (16) and said speed reducer side mount (17).

5. The power unit mounting assembling method according to claim 2, wherein said on-board mount (81) removed from between said sub-frame (SF) and said power unit (P) after the end of said third step comprises a snap-on pin (83) removably inserted into said power unit (P), a supporting member (84) detachably fastened to said sub-frame (SF), and a mount rubber (85) interposed between said snap-on pin (83) and said supporting member (84).

6. The power unit mounting assembling method according to claim 5, wherein said supporting member (84) is fastened to a mounting plate (89) fixed to said sub-frame (SF) by a single bolt (90) and a nut (91), one of said supporting member (84) and said mounting plate (89) being provided with a regulation hole (94) at a position offset from an axial line of said bolt (90) and said nut (91), the other of said supporting member (84) and said mounting plate (89) being provided with a locking pin (95) for regulating said supporting member (84) from rotating around the axial line of said bolt (90) by being inserted into said regulation hole (94), and said regulation hole (94) is formed into a long hole extending in a direction orthogonal to a locking direction with said regulation hole (94) and said locking pin (95).

7. A power unit mounting assembling apparatus for mounting a power unit (P) including a power source (E) and a speed reducer (T) on a car body frame (F) in such a way as to interpose a mount (16, 17) carrying a static load of said power unit (P) between said power unit (P) and said car body frame (F) and interpose a sub-frame (SF) attached on said car body frame (F) between said power unit (P) and said car body frame (F), said apparatus comprising:

an on-board mount (71, 81) interposed between said power unit (P) and said sub-frame (SF) and supported on said sub-frame (SF) in the almost same attitude as in a mounted state on said car body frame (F).

8. The power unit mounting assembling apparatus according to claim 7, comprising a removal member for removing said on-board mount (71, 81) from said sub-frame (SF) and said power unit (P) after supporting said power unit (P) on said car body frame (F) via said mount (16, 17).

9. The power unit mounting assembling apparatus according to claim 7 or 8, wherein said mount (16, 17) and said on-board mount (71, 81) comprise supported members (28, 42, 73, 83) attached to said power unit (P), supporting members (26, 49, 78, 84) attached to said car body frame (F) and said sub-frame (SF), and mount rubbers (27, 47, 74, 85) interposed between the supported members (28, 42,

73, 83) and the supporting members (26, 49, 78, 84) corresponding to each other, respectively, and wherein the rubber content of the mount rubber (74, 85) provided for said on-board mount (71, 81) is set to be smaller than the rubber content of the mount rubber (27, 47) provided for said mount (16, 17).

10. The power unit mounting assembling apparatus according to claim 8, wherein said on-board mount (81) removed from between said sub-frame (SF) and said power unit (P) comprises a snap-on pin (83) removably inserted into said power unit (P), a supporting member (84) detachably fastened to said sub-frame (SF), and a mount rubber (85) interposed between said snap-on pin (83) and said supporting member (84).

11. The power unit mounting assembling apparatus according to claim 10, wherein said supporting member (84) is fastened to a mounting plate (89) fixed to said sub-frame (SF) by a single bolt (90) and a nut (91), one of said supporting member (84) and said mounting plate (89) being provided with a regulation hole (94) at a position offset from the axial line of said bolt (90) and said nut (91), the other of said supporting member (84) and said mounting plate (89) being provided with a locking pin (95) for regulating said supporting member (84) from rotating around the axial line of said bolt (90) by being inserted into said regulation hole (94), and said regulation hole (94) is formed into a long hole extending

in a direction orthogonal to a locking direction with said regulation hole (94) and said locking pin (95).